Prenatal Care In European Countries

Dissertation

zur Erlangung des Grades eines Doktors der Medizin
der Medizinischen Fakultät der Universität Düsseldorf

vorgelegt von

Detlev Pusch

1983

Aus der Kinderklinik B der Universität
Düsseldorf

Direktor: Professor Dr. E. Schmidt

Prenatal Care In European Countries

Dissertation
zur Erlangung des Grades eines Doktors der Medizin
Der Medizinischen Fakultät der Universität Düsseldorf
vorgelegt von

Detlev Pusch

1983

Gedruckt mit Genehmigung der Medizinischen Fakultät
der Universität Düsseldorf

Der Dekan
der Medizinischen Fakultät
der Universität Düsseldorf

gez.: Prof. Dr. Brüster

Referent:
gez.: Prof. Dr. Schmidt

Korreferent:
gez.: Prof. Dr. von Ferber

		Page
0.	Introduction	1
1.	Health Care Systems	3
1.1.	Financing of prenatal care	4
1.1.1.	Public sector	4
1.1.2.	Private sector	5
1.2.	Terms of remuneration	5
2.	Number of antenatal visits	6
2.1.	Legislated or recommended number	6
2.2.	Average number	7
2.3.	Policies towards women who do not attend or re-attend	9
3.	Persons carrying out prenatal care	10
3.1.	Midwives	11
3.2.	Physicians	15
3.2.1.	GPs	15
3.2.2.	Obstetricians/Gynaecologists	16
4.	Place of prenatal care	17
4.1.	Health Centres	19
4.2.	Maternity out-patient departments	21
4.3.	MDs in their own private practices	23
5.	Content of examination in antenatal care	24
5.1.	Guidelines or instructions	24
5.2.	Screening	26
5.2.1.	Obligatory premarital screening	26
5.2.2.	Prenatal screening	26
6.	Prenatal home visiting systems	29
7.	Percentage of women who receive no antenatal care	31
8.	Risk pregnancies	33

9.	Pregnancy records	34
10.	Evaluation	35
11.	Prenatal Classes	35
12.	Protection of pregnancy and motherhood	37
12.1.	Duration of pregnancy leave	38
12.2.	Special rights	42
13.	Summary	43
14.	Literature	44

0. Introduction

In 1980 the WHO Regional Office for Europe formed a study group which aims at gaining an overview of perinatal services, their functions and their problems in member states of the region. The first step of the investigations was taken by issuing a questionnaire to member states focusing on the following main subjects:

1. Information about Health Services
2. Legal Regulations
3. Vital Event Registration
4. Prenatal Services
5. Delivery Procedures
6. The Newborn Baby
7. Postnatal Services
8. Neonatal Intensive Care

This report deals only with the answers to questions pertaining to prenatal care.

The questionnaire was standardised. Some of the questions were closed, i.e. a choice of possible answers was provided; other questions left the answer completely to the discretion of the person answering. It is to be emphasized that in different member states the answers were worked out either in the respective Ministries of Health or by experts who were either members of the Study Group or appointed by recommendation.

Thus, the results presented cannot be considered as being official throughout and discrepancies in the actual state of affairs may be encountered. At the same time this report should not be considered as an official WHO-document, which, however, is in the process of being prepared.

The questionnaire was sent to the member countries in Spring 1981. Up to Spring 1982 the following countries

had responded:

BELGIUM	LUXEMBOURG
BULGARIA	NETHERLANDS
CSSR	NORWAY
DENMARK	POLAND
FINLAND	PORTUGAL
FRANCE	ROMANIA
FRG	SWEDEN
GDR	SWITZERLAND
GREECE	TURKEY
HUNGARY	UK (England and Wales)
IRELAND	UK (Scotland)
ITALY	YUGOSLAVIA

1. Health Care Systems

The organization of prenatal health care systems in the countries covered in this study can be divided into two distinct groups:

1. Almost monopolistic organization

Countries belonging to this group are: BULGARIA, CSSR, FINLAND, GDR, HUNGARY, POLAND, ROMANIA, SWEDEN and YUGOSLAVIA.

In all the above mentioned countries care is offered exclusively through institutions, e.g. health centres, maternity out-patient departments, etc.; Medical Doctors (MDs) and midwives in free practice do not exist, or if they exist, they do not play an important part in providing prenatal care.

As a rule, a pregant woman's place of residence determines which institution will provide prenatal care. In some cases, this institution may refer the patient either as a matter of routine or in some cases because of special medical indication to another institution which may be better equipped to deal with the respective case.

2. Oligopolistic organization

Countries belonging to this group are: BELGIUM, DENMARK, FRANCE FRG, GREECE, IRELAND, ITALY, LUXEMBOURG, NETHERLANDS, NORWAY, PORTUGAL, SWITZERLAND, TURKEY, ENGLAND/WALES and SCOTLAND.

In all these countries prenatal care is provided not only by institutions but also by MDs in their own private practices. Furthermore, with the exception of Luxembourg, midwives in free practice are entitled to take part in prenatal care as well.

In case of medical indication a referral to a better equipped institution or a specialist/consultant is possible.

It should be considered that the efficiency of a referral system might be influenced by financial interests on the provider's side.

Different health policies include differences between the degree of competition among the care providers. In some countries "prenatal care teams" offer "shared care". Although others (out patient departments, consultants etc.) might be involved this is mainly a cooperative effort between general practitioner (GP) and midwife. For the expectant mother this means that care is provided for her by at least two persons.

To a certain degree, more often in urban areas, the expectant woman wanting antenatal care can choose from a number of facilities.

1.1. Financing of prenatal care

Out of the very complicated matter of financing of public health expenditure some basic facts are compounded in a study issued by the OECD (17) and in the Proceedings of the International Seminar on Sharing of Health Care Costs (4).

From the view of the pregnant woman the financing of prenatal care has to be considered under the question of whether she receives her care in the public or in the private sector.

1.1.1. Public sector

With one exception (BELGIUM) all member states have installed a prenatal care system in which a woman can receive her care without paying the fee out of her own pocket. In all these cases care is financed by central and/or local authorities or by government approved sickness insurances.

In BELGIUM preventive prenatal care is not covered by social security. Only some antenatal clinics in the south of BELGIUM are budgeted.

In countries with a monopolistic health system the public sector is restricted on institutions; while in countries

like DENMARK, FRG, IRELAND, LUXEMBOURG, NETHERLANDS, NORWAY, SWITZERLAND, ENGLAND/WALES and SCOTLAND the woman may receive her prenatal care also at the MD's own private practice as a public patient, without paying private fees. The MD is paid directly through government funds or insurance, if he is a member of the respective system.

However, while in FRG nearly every MD with a private practice is a member of the public system, this is not the case in countries like IRELAND, ENGLAND/WALES and Scotland where only a restricted number of MDs is allowed to become a member of the Health Service Programme.

1.1.2. Private sector

In countries with an oligopolistic health system a pregnant woman may decide to receive her care as a private patient, i.e. if she has no private insurance she will have to pay out of her own pocket.

There are distinct differences in the significance of the private sector. While the private sector is relatively insignificant in FRG, it is rather important in countries like BELGIUM, GREECE, FRANCE, ITALY, PORTUGAL and TURKEY.

1.2. Terms of remuneration

It is well understood that the terms of remuneration, as ILLICH (12) demonstrated, influence the medical procedure.[1)] The MD in the NETHERLANDS receives a lump sum for prenatal care, in DENMARK he is paid for each examination and in FRG he receives a fee for each additional service performed. The income of a member of the Health Service Programme in IRELAND, ENGLAND/WALES and SCOTLAND depends to a great extent on the number of public patients on his list.

---

1) In FRG the Bundesministerium für Arbeit und Sozialordnung ordered a study: "The effect of remuneration on the structure of medical service in international comparison", to be published in 1983.

2. Number of antenatal visits

There is a difference between the legislated or recommended number of antenatal visits and the actual practice.

2.1. Legislated or recommended number

Explicit legislation about the number of antenatal visits seems to exist only in FRANCE (Arrêté du 27.8.1971), FRG (Mutterschaftsrichtlinien, 1975), GDR (Richtlinien für die Schwangerenbetreuung) and in LUXEMBOURG (Law of June, 1977)

All those countries which did not quote actual laws stated a recommended number of visits. There is reason to presume that the effect of these recommendations is in many cases very close to legal force.

The recommended or legislated number is always ment for uncomplicated pregnancies only. Risk cases are generally to be seen more often and the number of visits depends on the individual case.

In BELGIUM the recommendation relates only to the southern part of the country. In ITALY and TURKEY recommendations vary from region to region.

The exceptionally high number in ROMANIA comprises 10 visits performed by the MD and about 20 visits by the midwife.

For an overview see table 1.

Table 1

Number of legislated or recommended prenatal visits. (uncomplicated cases)

COUNTRY	NUMBER
BELGIUM	7
BULGARIA	10
CSSR	more than 6
DENMARK	10
FINLAND	14
FRANCE	4
FRG	10
GREECE	12 - 15
HUNGARY	more than 4
IRELAND	5 - 10
ITALY	7
LUXEMBOURG	5
NETHERLANDS	12
NORWAY	14
POLAND	8 - 10
PORTUGAL	10
ROMANIA	30
SWEDEN	13
SWITZERLAND	4
TURKEY	12
ENGLAND/WALES	12 - 15
SCOTLAND	12
YUGOSLAVIA	6

2.2. Average number of actual prenatal visits

No data was received about the average number of prenatal visits from BELGIUM, GDR, IRELAND, ITALY, ENGLAND and WALES.

Data source was given by quoting only two national studies done in FRANCE (18) and in Norway (2). FRG gave the results of a regional study (19). Many countries noted that the actual figure is estimated.

The number of actual prenatal visits relates only to those women who received care. (See also chapter 7)

As the average number of prenatal visits includes risk pregnancies which are generally seen more often, we expect the number of practised visits to be higher than the recommended number. This is not always the case.

In table 2 there are three different sections. In section A the average actual number is higher than the recommended number, in section B corresponding figures were found and in section C the actual average number is lower than the recommended number. It is quite clear that the compliance of the pregnant women is rather low in countries belonging to section C and rather high in countries belonging to section A.

Table 2

Average actual number versus recommended or legislated number of prenatal visits

SECTION	COUNTRY	average actual number	recommended or legislated number
A	BULGARIA	11	10
	CSSR	12	more than 6
	FRANCE	5.9	4
	HUNGARY	8.2	more than 4
	NETHERLANDS	12 - 14	12
	ROMANIA	37	30
	SWEDEN	14	13
	SWITZERLAND	5	4
B	FINLAND	14	14
	GREECE[1)]	7 private MD 5.5 State Mat.	12 - 15
	LUXEMBOURG	5	5
	SCOTLAND	10 - 12	12
C	DENMARK	8	10
	FRG	8.9	10
	NORWAY	7 - 9 = 31 % more than 10 = 40 %	14
	POLAND	6 - 8	8 - 10
	PORTUGAL	4.6	10
	TURKEY	2	12
	YUGOSLAVIA	4.1	6

1) In GREECE many women go to a private MD and for various financial benefits to the State Maternity institutions as well..

2.3. Policies towards women who do not attend or re-attend

Basically there are two ways to lower the number of non-attenders or of women who fail to re-attend. Both ways may be combined:

1. The woman receives financial subsidies if she attends the required number at the required This system of subsidies (3,21) has been established in CSSR, FRANCE, FRG, GDR and LUXEMBOURG.

2. Women who fail to re-attend are regarded as risk cases and are contacted by a midwife or a health worker. This is either a regulation or common practice in: BULGARIA, DENMARK, FINLAND, GDR, HUNGARY, IRELAND, NETHERLANDS, POLAND, ENGLAND/ WALES, SCOTLAND and YUGOSLAVIA. For more details see also chapter 6 (home visiting service).

3. Persons carrying out prenatal care

Theoretically prenatal care, at least in uncomplicated pregnancies, can be carried out by midwives and/or GPs and/or obstetricians, either in the form of "shared care" or exclusively.

Asking about the recommendations as to who should see the patient at which visit (Results - see table 3) the source of these recommendations was very seldom quoted (CSSR, FINLAND, FRANCE, GDR, GREECE, HUNGARY, LUXEMBOURG, NORWAY, ROMANIA and YUGOSLAVIA). Some of the countries which did not state a source mentioned that their answer describes the common practice. Another problem is that there is no information as to what extent the above mentioned recommendations are met in daily practice.

Table 3
Question: What, if any, are the recommendations regarding who should see the patient at which visit? (uncomplicated pregnancies)

COUNTRY	Midwife	GP	Obstetrician/Gyn.
BELGIUM	-	+	+
BULGARIA	+	+	+ (urban)
CSSR	2 - 4	-	8 - 10
DENMARK	5	3	2
FINLAND	10	3	-
FRANCE	+	→ 1 ←	
FRG	exceptional	+	++
GREECE	+	-	+
HUNGARY	+	+	+
IRELAND	+	+	+
ITALY	+	+	+
LUXEMBOURG	-	1	4
NETHERLANDS	+	+	-
NORWAY	11	3	-
POLAND	+	+	+ (urban)
PORTUGAL	-	+	+
ROMANIA	20	9	1
SWEDEN	+	+	+
SWITZERLAND	exceptional	+	+
TURKEY	+	+	-
ENGLAND/WALES	+	+	-
SCOTLAND	+	+	+
YUGOSLAVIA	+	+	+

The role of the midwife in Europe is thoroughly changing at the present time.

1. Midwives do not take part in prenatal care

   In some countries prenatal examinations are not at all, or very seldom, given by midwives. This is the case in BELGIUM, FRG, LUXEMBOURG and SWITZERLAND. In LUXEMBOURG the midwife is not considered to have the training for prenatal examinations. (16) Although the midwife in FRG is legally entitled to give prenatal care, this happens only in those exceptional cases when the expectant mother plans to have a home confinement.

   In all the above mentioned countries the midwives have lost their share in prenatal care to medical doctors. Typically, most midwives work in hospitals, the working place is the labour ward and the actual work depends very much on the MD in charge.

2. Midwives participate in prenatal care

   In those countries where the midwife is involved in prenatal care, considerable differences are found. Although there is no doubt that in some European regions the midwife is responsible for the entire care of a pregnant woman, this happens mainly because of lack of personnel and not by recommendation. It is rather typical that, concerning prenatal care, official recommendations always mention the midwife and the MD cooperating together. Because of this tendancy, it can be assumed that the original role of the midwife has been drastically changed, and in the comming years "midwife-only" care will become less and less frequent.

   The following excerpts from the answers received to the question:"What are the tasks of midwives in

In BULGARIA the midwife is very often the key-person for prenatal care, from the diagnosis of pregnancy until the preparation for delivery. In some places she decides which consultations are needed and whether the case is considered to be a normal one or a risk case.

In CSSR she is, in some centres, allowed to give the care for normal pregnancies. However, the first examination is always done by the obstetrician, who decides whether it is a risk pregnancy or not.

In DENMARK the midwife is to advise the woman and to perform some physical examination. The pregnant woman receives a time-table plan of visits to her midwife, her GP and the out-patient department. The visits to each of the above are planned according to gestation development of the foetus.

Although the MD has the medical responsibility in FINLAND, the midwife is the main observer, the main health and social adviser as well as the main parenthood trainer. She keeps records, makes medical examinations, all routine tests, contacts the doctor, hospitals, social agencies, makes home visits etc.

In FRANCE the midwife participates in prenatal care. Only the first medical examination has to be done by a MD.

In GDR, the midwives cooperate with doctors with respect to medical examinations, social tasks and health education.

Midwives in rural areas in GREECE may perform some routine tests. In urban areas she might refer the women to the obstetrician, if there is one employed. Many midwives work as "secretaries" in private obstetricians' offices or as nurses in General Hospitals.

In HUNGARY most midwives work in obstetric units.

In IRELAND most midwives work in hospitals. The role of midwives working outside of hospitals is declining with the reduction of home deliveries.

In ITALY there is still a considerable number of midwives in free practice. Whether they are in free practice or attached to an institution, their tasks are the same: following the women through pregnancy, identifying risk patients, taking care of home deliveries and working in family clinics for counselling.

In the NETHERLANDS the midwife (in free practice) normally works independently and bears full responsibility for the prenatal period of normal cases. She performs medical examinations and conducts normal deliveries without a physician.

In NORWAY the midwife may work in a health centre where she does some routine examinations (followed by MDs' examination). She also explains hospital routines and prepares the pregnant women for birth. Outside health centres midwives may work as district midwives whose tasks in antenatal care are not well defined.

In ROMANIA the midwife accompanies the pregnant woman at physical examinations carried out by a doctor in the local institution. She is also responsible, by visiting the woman at home and at her place of work, for checking that the provisions made by law for the protection of pregnant women are respected. She reports any transgressions of the same to the doctor.

In SWEDEN the tasks of midwives who work in a health centre are as follows: check-ups (including medical obstetrical examination), counseling, educational tasks.

In TURKEY the midwife usually does the antenatal care by home visits. Very often she is responsible for the entire care and she decides which case is to be seen by the MD. Many midwives work in free practice.

ENGLAND/WALES: midwives take part in shared care with the GP.

In SCOTLAND the midwife may be responsible for counselling, health education, sometimes also physical examination. It depends very much where the midwife's working place is.

In YUGOSLAVIA the midwife controls the health of pregnant women, instructs them in health education, gives assistance in the gynecological outpatient department.

3.2 Physicians executing prenatal care

In many countries (BELGIUM, FRG, LUXEMBOURG, PORTUGAL and SWITZERLAND) physicians are solely responsible for the prenatal care of the pregnant woman. The midwife is not necessarily included.

Pertaining to the physician's qualifications, only a choice between General Physician and Obstetrician/ Gynaecologist was provided for in the questionnaire.

The questionnaire did not ask about the definition of a General Physician and it is not clear whether the term General Physician (GP) is equivalent to the term General Practitioner (GP). Thus, we must be well aware of the fact that some countries may have used the term GP for a rather inexperienced newly qualified Medical Doctor, while other countries use the term GP strictly for an experienced specialist in General Medicine only.

3.2.1. GPs

1. Not involved
GPs are not involved in prenatal care programmes in the CSSR or in GREECE. In GREECE this is not by choice but because a newly qualified MD is not considered as a GP. As a matter of fact, GREECE noted that there is no such speciality as GP.

2. Strongly involved
For normal cases, there is a strong prevalence of GPs in FINLAND, the NETHERLANDS, NORWAY, ROMANIA, TURKEY and ENGLAND and WALES.

Many countries noted that GPs play a larger role in prenatal care in rural areas than they do in urban areas.

3. Sharing care with Consultants

Other countries give preference to a system whereby, as a rule, GPs and consultants carry out prenatal care together. This is the case in DENMARK, LUXEMBOURG and ROMANIA.

3.2.2. Obstetricians/Gynaecologists

Those women receiving prenatal care at the MD's own office mainly go to gynaecologists or obstetricians in FRG, GREECE, ITALY, LUXEMBOURG and PORTUGAL.

In SWITZERLAND it is believed that gynaecologists/ obstetricians and GPs have a similar share in providing prenatal care.

There is a tendency in the FRG towards specialist care (19) of the expectant mother in normal cases. A possible reason for this is the increasing number of specialists available, even in rural areas. We believe that this phenomenon is common to many other European countries.

In many countries, such as FINLAND, NETHERLANDS, ENGLAND and WALES, a pregnant woman sees the specialist mainly on a consultant basis, as a rule she has no direct access.

Exceptional is the case in the CSSR, where every pregnant woman is seen at least once by a specialist. This is possible only in a very well organized health-care system.

4. Place of prenatal care

Prenatal care is executed mainly in health centres, maternity out-patient departments and in MDs' private practices (See below and Table 4).

The expectant mother's home as a place for prenatal care is, with about 50 % of all cases, important for TURKEY only. However, for some rural areas, the expectant mother's home was mentioned from GREECE, ITALY and ROMANIA as well.

In the CSSR, ROMANIA, ENGLAND and WALES the expectant mother is often attended to at her place of work. Generally, this offer is made only in a few big factories.

In the NETHERLANDS about 40 % of pregnant women are cared for at the midwife's private office. In DENMARK there are special midwife centres, staffed with several midwives. Practically all pregnant women go there. (Part of shared care).

Table 4
Place of prenatal care

COUNTRY	Health Centres	Maternity out-patient dept.	MDs in their own private offices
BELGIUM	~25 %	~75 %	
BULGARIA	100 %	+	
CSSR		100 %	
DENMARK[1]		++	++
FINLAND	100 %	+	
FRANCE	3 %	26 - 33 %	71 %
FRG		~20 %	~80 %
GDR	99.6 %	+	
GREECE	++	++	++
HUNGARY	96.6 %	+	
IRELAND	+	40 - 50 %	++
ITALY	++	++	++
LUXEMBOURG		+	++
NETHERLANDS[2]		30 - 40 %	~20 %
NORWAY	++	+	++
POLAND	99 %	+	
PORTUGAL	~25 %	~10 %	++
ROMANIA	100 %		
SWITZERLAND		~20 %	~80 %
TURKEY	++	++	++
ENGLAND/WALES		+	++
SCOTLAND		+	++
YUGOSLAVIA	++	+	

1) In DENMARK practically all pregnant women go to three places: midwife centre, maternity out-patient department, MD in private practice.

2) In NETHERLANDS about 40 % of care is given at the midwife's own private office.

4.1. Health Centres

The use of the term Health Centre in the questionnaire tended to lead to some confusion. Some countries consider an antenatal clinic to be a health centre, others think of the local MD's office. In the following paragraphs we try to describe health centres as a place where prenatal care is carried out (See also Table 4).

In BELGIUM 25 % of prenatal care is executed by the antenatal clinic of ONE. This clinic covers the south of Belgium only. Staff: obstetrician - gynaecologist, health nurse and voluntary worker.

In BULGARIA nearly all prenatal care is provided in health centres. In urban areas these can be out-patient clinics with antenatal clinics. Roughly they handle 57 % of cases and are staffed with an obstetrician plus midwives. In rural areas (about 40 % of cases) care is executed in local health centres or village subcentres. Staff: GP/Feldsherer + midwife + nurse visitor.

Maternity health clinics of health centres in FINLAND are at least staffed with GP and public health nurse (with midwifery training). Only in Helsinki, maternity health centres are staffed with obstetricians. Psycologists, physiotherapists etc. working in health centres are available as consultants.

Prenatal care in FRANCE is given only to a very small percentage (about 3 %) in Health Centres. This is because Health Centres are mainly for the care of young infants.

The majority of women in GRD is cared for in maternity out-patient clinics of general or maternity hospitals. Staff: gynaecologists, midwives and health workers. There is no difference between urban and rural areas.

In rural areas of GREECE there might be either a rural health centre or a rural MD's practice. In both cases one newly qualified MD doing his one year obligatory service is in charge. There is also one nurse and/or midwife. Rural health centres have two additional health workers. The efficiency is supposed to be rather low. In urban areas philanthropic centres predominate. Although they ought to have an obstetrician, such jobs are not economically interesting to the MDs. All antenatal care is thus a midwife activity in these centres. However, most women in Greece go to the above mentioned institutions for financial reasons, e.g. benefits only, and they go to a private MD as well.

Health centres in HUNGARY are staffed in urban areas with obstetrician-gynaecologists and nurses. In rural areas care is provided by GPs but there are bi-weekly consultant visits.

In IRELAND a public health nurse with midwifery training is constantly in attendance, an MD attends on fixed days.

ITALY has no standard model. Health centres do not cover the whole country. In some areas clinics are open two or three times a week. Usually they are staffed with one part-time MD and one or two nurses. Sometimes midwives belong to the staff as well.

Although private MDs still seem to predominate in carrying out prenatal care, there is a strong tendency towards Health Centres in NORWAY. The country is covered with a net of health centres. The staff, with regard to pregnancy care: GP plus nurse. In few large city centres gynaecologists can be found.

In POLAND health centres, which may also be maternity outpatient clinics or health cooperatives are staffed with obstetricians and midwives. In rural areas the health centre is staffed with physicians only.

Health centres in PORTUGAL are staffed with obstetricians, gynaecologists and public health nurses in urban areas, while in rural areas the GPs and public health nurses perform antenatal care.

Health centres or out-patient clinics in ROMANIA are staffed with GPs and midwives.

SWEDISH health centres are always staffed with at least one GP and one nurse-midwife. In urban areas there could be an obstetrician instead of a GP and more nurses and midwives are employed. Often physiotherapists, psycologists and social workers or family advisors are available.

Health centres in TURKEY are staffed in rural areas with GP, nurse and midwife. There may be specialists in urban areas.

In urban areas of YUGOSLAVIA care is to a high degree provided at special dispensaries for women which are staffed with gynaecologists and midwives. In rural areas general health centres, staffed with GPs and midwives, provide the pregnant women with care.

4.2. Maternity out-patient departments

Prenatal care is executed at out-patient departments in all countries covered in this study.

It is difficult to estimate to which degree out-patient departments are involved in carrying out prenatal care. This is because out-patient departments may

1) accept every pregnant mother (direct access, no referral needed),
2) accept referred risk cases and
   a) perform exclusive care
   b) perform shared care with the institution or the MD who referred the case

3) undertake special screening methods which can not be done by the private MD or the Health Centre because of lack of equipment. The patient remains under the care of her own MD or Health Centre.

Exceptional is the situation in CSSR where all prenatal care is executed at maternity out-patient departments until the 36th week of gestation and thereafter at maternity hospitals.

In DENMARK every pregnant mother attends at least twice at the out-patient department (part of shared care).

In IRELAND, ENGLAND/WALES and SCOTLAND, out-patient departments are important for shared care but they also perform exclusive care. Figures for UK (5): exclusive care from hospital medical staff = 22.7 % shared care (hospital and GP) = 38.7 %.

In FINLAND, NETHERLANDS, NORWAY and SWEDEN, maternity out-patient departments are mainly for risk cases.

In FRG about 20 % of women receive care exclusively at the out-patient departments. There is direct access and every pregnant mother can receive her care at out-patient departments if she so wishes. However, it is estimated that in some regions the majority of women attend at least once or twice at the out-patient departments to receive special screening. These women remain under the care of their own MD (19).

For SWITZERLAND the situation is similar to FRG.

4.3. MDs in their own private practices

Prenatal care is executed to a very high percentage at the MD's own office in BELGIUM, FRANCE, FRG and SWITZERLAND. At least for FRG and SWITZERLAND the figures from Table 4 do not give information about the percentage of exclusive care performed by private MDs. This is because not every specialist has the equipment to execute all screening methods (like ultrasound) and he has to send the women to a hospital for the ultrasound examination. However, he does not lose the women as patients. For the FRG we judge the percentage of strictly exclusive prenatal care (no consulting, no referral) at about 20 %.

Although we received no actual figures, the percentage of exclusive care performed by MDs in their own practices is supposed to be very high in LUXEMBOURG and, depending to a great extent on regional factors, in GREECE, ITALY, ROMANIA and TURKEY.

The situation in GREECE is exceptional because women may for financial reasons attend at State Institutions as well but there is no coordination between private MD and health centre. Furthermore, health centres are very often not sufficiently equipped.

5. Content of examination in antenatal care

We feel unable to describe the content of examination in antenatal care.
This is because the questionnaire left the extent of information passed on completely to the discretion of the person answering. Therefore, we received statements varying from "routine obstetrical examination" to a very detailed list of contents. Another problem is that the content of examination varies from visit to visit. Thus we feel that this question can be answered sufficiently only with more research.

5.1. Guidelines or instructions

National guidelines or instructions for the procedure of antenatal care, as far as medical personnel is concerned, might guarantee a minimum national quality standard in executing prenatal care.

The importance of such guidelines was characterized best by a member country where no such guidelines exist with the following remark: "... depends on each individual obstetrician's inherent wisdom".

On the other hand, it must be realized that the existence of such guidelines does not automatically guarantee a very high standard:
1. Such guidelines are always the result of a compromise between the consideration of what is necessary and the amount which the public is prepared or able to spend.
2. Guidelines are unable to eliminate social factors of the women. These factors influence the interaction between the woman and the medical personnel and the quality of antenatal care itself. For details in FRG see Collatz et al (8) and in FRANCE Blondel et al (3).

For the existence of guidelines see Table 5.

Table 5

Excerpts from the original answers to the question: "Are there any printed guidelines or instructions for the procedure of antenatal care for health personnel? (i.e. the content of each visit, etc.)"

BELGIUM	for social nurses employed by O.N.E. (antenatal clinics in the south of Belgium) since 1981 "Guide d' Observation et d'action éducative"
BULGARIA	special job description and obligation for midwife and obstetrician
CSSR	"Obligatory instructions" edited by the Ministery of Health and printed every ten years in State Collection of issued Laws and Regulations
DENMARK	such guidelines exist for midwives
FRANCE	Arrêté du 27 août 1971 relatif aux examens médicaux pré et postnataux
FRG	Mutterschafts-Richtlinien
GDR	Richtlinie für die Schwangerenbetreuung
FINLAND	Instructions given by the National Board of Health
GREECE	no
HUNGARY	detailed description is given by the regional head obstetrician
IRELAND	no
ITALY	no answer
LUXEMBOURG	Reglement Grand Ducal du 8. decembre, 1977
NETHERLANDS	The Ministery gives guidelines, such as on examination of blood and rhesus immunization
NORWAY	no
POLAND	Instructions by Ministry of Health
PORTUGAL	There is a booklet about this in primary health care
ROMANIA	Ordre du Ministre de la Sante
SWEDEN	General Advice from the National Board of Health and Welfare, 1981. Together with principle program for the content and organisation for Mother Child Health "Socialstyrelsen redovisar, 1979:4".
SWITZERLAND	According to general recommendations of University Hospitals
TURKEY	"Yes"
ENGLAND/WALES	no standard
SCOTLAND	Consideration is likely to be given to revising the "Memorandum of Guidance" for GPs in the near future
YUGOSLAVIA	no national guidelines

5.2. Screening

The extent of prenatal screening is influenced if premarital examinations are obligatory in a country.

5.2.1. Obligatory premarital screening

In some countries a couple has by law to have a medical examination before marriage. This is the case in BULGARIA, FRANCE, HUNGARY, LUXEMBOURG and TURKEY. For details see Table 6.

Table 6
Pre-marital examination

BULGARIA	examination requested
FRANCE	obligatory examination includes: blood group, rhesus type, antibodies rubella and toxaeplasmosis, syphilis screening, X-ray of the lungs if necessary.
HUNGARY	obligatory for all couples under 35 years of age. Consultation is given by the district obstetrician.
LUXEMBOURG	obligatory for both: clinical examination, X-ray of the lungs, blood group, rhesus type, syphilis. For the women: Antibodies rubella and toxaeplasmosis
TURKEY	medical certificate requested, includes syphilis

5.2.2. Prenatal screening

The questionnaire included items for the following screening methods:

- blood group
- toxaeplasmosis
- rubella
- tetanus
- amniocentesis
- ultrasound
- others

For condensed results see Table 7.

Blood Group

Blood group is checked in nearly all countries covered in this study as routine. Only in TURKEY this is not a national programme. No information was received in this regard about GREECE or ROMANIA.
Some countries mentioned that they determine rhesus type routinely (BELGIUM, CSSR, FRANCE, FRG, NETHERLANDS, NORWAY and SWITZERLAND). However, this does not mean that those countries which did not mention it do not determine rhesus types. This is because rhesus was not especially asked for in the questionnaire.

Toxaeplasmosis, Rubella, Tetanus

For results see Table 7.

Amniocentesis

In all countries available on special indication only.

Ultrasound

Performed routinely in FRG and SWITZERLAND (with at least two examinations) and in LUXEMBOURG with 1-3 examinations.

In all other countries on special indication or as a routine in some centres only.

There has been some debate about psycho-social side effects of early ultrasound examinations. (Latest review see Fraser (10)).

Others

Many countries mentioned blood presure, albuminuria and syphilis screening. However, not mentioning it does not mean that this is not done, because this was not a special question.

Table 7
Screening methods (antenatal care)

	blood group	toxoplasmosis	rubella	tetanus	amniocentesis	ultrasound (number)	others
BELGIUM	+	(+)	+	-	(+)	(+)	TB, Syphilis
BULGARIA	+	(+)	-	-	(+)	(+)	
CSSR	+	(+)	(+)	(+)	(+)	(+)	
DENMARK	+	(+)	(+)	-	(+)	(+)	Syphilis
FINLAND	+	(+)	(+)	(+)	(+)	(+)	Syphilis
FRANCE	+	+	+	-	(+)	(+)	Syphilis
FRG	+	(+)	+	-	(+)	2	Syphilis
GDR	+	(+)	(+)	(+)	(+)	(+)	Syphilis
GREECE	?	?	?	?	?	?	
HUNGARY	+	(+)	(+)	-	(+)	(+)	Syphilis
IRELAND	+	-	(+)	-	(+)	(+)	
ITALY	+	?	?	?	?	?	
LUXEMBOURG	+	+	+	-	(+)	1 - 3	Syphilis
NETHERLANDS	+	-	(+)	-	(+)	(+)	Syphilis
NORWAY	+	-	(+)	-	(+)	(+)	Syphilis
POLAND	+	(+)	(+)	-	(+)	(+)	
ROMANIA	?	+	+	-	(+)	(+)	
PORTUGAL	+	(+)	(+)	(+)	(+)	(+)	
SWEDEN	+	-	+	-	(+)	(+)	
SWITZERLAND	+	+	+	+	(+)	2	
TURKEY	(+)	(+)	(+)	(+)	(+)	(+)	
ENGLAND/WALES	+	(+)	(+)	(+)	(+)	(+)	
SCOTLAND	+	(+)	+	(+)	(+)	(+)	
YUGOSLAVIA	+	(+)	(+)	-	(+)	(+)	

+ routine screening
(+) on special indication or in some centres only
- not performed
? no information, no answer

See also Table 6: in many countries total screening only if the woman had no pre-marital examination.

6. Prenatal home visiting systems

With regard to antenatal care several home visiting systems are common:

1. In those cases where the expectant mother is going to have a home delivery she is nearly always visited at home, either by a health visitor or a nurse/midwife to check accommodation and equipment. This system is working very well, for example, in the NETHERLANDS.

2. National home visiting systems covering every pregnant woman exist in CSSR, HUNGARY, ROMANIA, TURKEY and YUGOSLAVIA. National programmes are not always met in daily practice, e.g. YUGOSLAVIA where the system is better organized in urban areas than in rural ones. In most cases it is the midwife who visits the mother at her home, gives advice and checks the suitability of the environment. A very high percentage of mothers are visited at their place of work in ROMANIA.

   Medical examinations are not the rule, with the exception of ROMANIA and TURKEY.

3. Home visiting systems of considerable efficiency exist in BELGIUM, DENMARK, GDR, GREECE, ENGLAND/WALES and in SCOTLAND. (See Table 8)

Table 8
Home visiting of considerable efficiency (prenatal)

BELGIUM	in the southern region of Belgium every pregnant woman is visited at least twice.
DENMARK	intended, but not always practised, to visit every pregnant woman at her home.
GREECE	not practised countrywide
ENGLAND/WALES	not always practised
SCOTLAND	intended, but not always practised

Especially in ENGLAND/WALES and in SCOTLAND it is the aim to visit at least all non-attenders and social at-risk families. However, in many regions every pregnant woman is visited at her home.

4. As a rule, only non-attenders and/or risk cases are visited in BULGARIA, FRANCE, IRELAND, POLAND, PORTUGAL and SWEDEN.

5. Home visiting is very seldom in FINLAND, FRG, ITALY, LUXEMBOURG and NORWAY. In ITALY home visiting occurs in very few cities only. In FRG and in LUXEMBOURG, home visits are only done on request and it is the social worker who is to see the expectant mother in these cases. However, in Bremen (FRG) there is a project being carried out with the aim of improving pre- and postnatal care. This project includes a prenatal home visit to every pregnant woman. For details see Collatz et al, 1981 (9).

7. Percentage of women who receive no antenatal care

Knowing the percentage of women who receive no antenatal care means knowing the percentage of women who receive care. The latter figure does, of course, give no data about frequency and standard of the actual care carried out, e.g. if the woman has at least one prenatal examination she belongs to the group of women who receive prenatal care.

A rather high percentage of women receive no prenatal care at all in BELGIUM, GREECE, ITALY, POLAND, PORTUGAL and TURKEY. Many countries have no data at all. As far as studies were quoted in the answers to the questionnaires, they are mainly regional (See Table 9).

There is some discrepancy reported from YUGOSLAVIA. Only about 2 % of women receive no antenatal care, as stated in Table 9. On the other hand, we can see from the Statistical Yearbook (20) that in 1977 in Kosovo more than 50 % and in three other regions more than 20 % of births took place without medical attendance. The other extreme is found in Slovenia, where only 0.4 % of births took place without medical attendance.

Table 9
Excerpts from the question: What approximate percentage of women receive no antenatal care?

	Answer	Source:
BELGIUM	4.3 % regional 15.0 % regional	1974-1978, CIGO (7) 1977, Adam et al (1)
BULGARIA	exceptional	-
CSSR	0.5 %	-
DENMARK	less than 1 %	-
FINLAND	0.02 %	-
FRANCE	0.6 % national	1976, representative sample
FRG	1.0 % regional	1975-1977, MPS (9)
GREECE	15-30 % regional	1974, Kafatos et al (14,15)
HUNGARY	0.5 %	-
IRELAND	no data	-
ITALY	10.0 %	estimated
LUXEMBOURG	no data	-
NETHERLANDS	small percentage	-
NORWAY	less than 1 %	-
POLAND	below 20 %	Health Service Year Book (11
PORTUGAL	35.0 %	-
ROMANIA	exceptional	-
SWEDEN	about 1 %	-
SWITZERLAND	less than 5 %	estimated
TURKEY	10-50 %	-
ENGLAND/WALES	less than 2 %	-
SCOTLAND	0.1 %	Scottish Maternity Statistics
YUGOSLAVIA	about 2 %	-

8. Risk Pregnancies

Usually it is the MD who firstly assesses the patient as being at risk or not. In some countries (BELGIUM, FINLAND, GREECE, NETHERLANDS, SWEDEN and TURKEY) assessment is also made by the midwife.

Check lists of risk factors are widely used in many countries, while real risk-scoring systems are only found in exceptional cases. This means, there is hardly a formalized strategy to distinguish between different risk levels, such as low risk, medium risk and high risk. The MD in charge is responsible for "grading" the risk and the further care of the patient depends very much on how serious the risk is considered to be. Easier cases are just seen more often, there might be some more screening and, as a rule, additional visits to specialists.

Whatever the risk-strategy in a country is, very often there is a coincidence between medical and social risk factors in the same woman and it seems that especially women with both medical and social risks do not always follow this strategy. For details see Collatz (8) and Blondel (3).

High risk cases are, if necessary, hospitalized. Generally a risk case is booked automatically for hospital delivery. The strategy for those countries where home deliveries take place is, that if a risk is spotted in a woman the delivery has to take place at the hospital and not at the mother's home.

All countries covered in this study have special centres for dealing with high risk cases, at least on a university level. The referral mechanism seems to be uncomplicated. Unfortunately, in most countries high risk pregnancies are also dealt with in institutions of a secondary or primary care level. There are, among others, mainly two reasons for non-referral of high risk cases:

1. The institution of secondary or primary care feels (and even may be) capable of dealing with high risk cases.

2. Financial reasons could be responsible for non-referral. The term "financial reasons" does not apply to profit-oriented institutions only, also non-profit organisations might have a tendency to keep the patient. Very often the budget of non-profit organisations depends to a certain degree on the number of cases they have dealt with.

Interdisciplinary team meetings for the care of high risk pregnancies are in most countries locally practised. Regional team meetings are more often organised in countries with a monopolistic health system. In countries with oligopolistic systems regional meetings are more informal and mainly for special studies only.

9. Pregnancy Records

Standardised prenatal records are available in most countries. It seems that the "Pregnancy-Passport" which the mother keeps is more often standardised than the records held by the MD or care institution.

"Pregnancy-Passports" can be obtained with only very few exceptions (e.g. NETHERLANDS and YUGOSLAVIA, in SWITZERLAND only if the mother pays for it) in almost all countries covered by this study. As a rule, the mother's record is not exactly identical with that held by the medical personnel but it contains a summary of relevant details. In countries with a prevalence for shared care the relevant information is often transfered through the mother's record only. That is why some countries use the term "Cooperation Card" instead of "Pregnancy-Passport".

It was complained that it is often not duly completed by the medical personnel or not available at the delivery. This is probably one of the reasons why antenatal care personnel often transfer their own copies to the hospital before delivery and do not rely on the mother's own records.

10. Evaluation

It is quite clear that evaluation or quality control of prenatal care is more difficult to organise in countries with an oligopolistic health care structure than in those with a monopolistic structure.

That is why quality control studies covering all prenatal care facilities, i.e. including private MDs and private midwives, are not done on a national basis. However, on a sample basis, some attempts have been made. In FRANCE three national studies were done by Inserm: 1972 - 1976 - 1981. For the NETHERLANDS the midwives are supervised per individual case by a midwife at the ministry, in BELGIUM and many other countries regional studies are made by the universities. In ENGLAND/WALES and SCOTLAND local and regional perinatal mortality reviews are used (6). In FRG a regional study is ongoing (19) and the Ministry ordered a national study on a sample basis (13).

For the countries with a monopolistic health care structure evaluation and quality control is nearly always done on a national and/or on a regional basis. Evaluation seems to be especially well developed in CSSR, FINLAND and GDR where the prenatal records are also used for evaluation.

11. Prenatal Classes

Prenatal classes are offered to pregnant mothers in all countries covered in this study. Some countries specified that these classes are offered to fathers as well.

Classes are organized by health centres and hospitals mainly but in many countries also by churches, midwives and other health personnel, insurance companies, welfare institutions etc. Usually classes are free of charge, but in some countries the mother is asked to make a small contribution, according to her means. Prenatal classes run by profit oriented institutions are only to be found in Switzerland.

Only few countries were able to give data about the percentage of participation. For details see Table 10.

Table 10
Participation on prenatal classes

	Percentage	Source
BULGARIA	70 %	guess
CSSR	30 % of all pregnant women	National Health Statistics
DENMARK	50 - 60 %	guess
FINLAND	51 % of all pregnant women 90 % of I-Parae	national data
FRANCE	18 % of all pregnant women	1976, INSERM representative sample
FRG	40 - 50 % of all pregn. w.	regional Collatz et al (8)
GDR	25 %	-
NETHERLANDS	60 % of I-Parae	-
NORWAY	16 % of all pregnant women	Bakketeig and Bergsjø (2)
ROMANIA	70 % of all pregnant women	-
SWEDEN	60 % of all pregnant women	-
SWITZERLAND	30 %	estimated
ENGLAND/WALES	about 20 %	British Births (5)

12. Protection of Pregnancy and Motherhood

All member countries have some benefit regulations pertaining to the protection of pregnancy and motherhood. These benefit regulations are often very complicated, e.g. there are hardly any laws which cover all pregnant women equally within a country.

The extent of the protection of the pregnant woman depends, as a rule, on her eligibility, e.g. such factors as

- how long the woman has worked continuously with her recent employer
- how many hours a week
- how many employees her employer has
- what type of job she does.

Especially for woman employed in agriculture, the benefits are very often less generous.

Financial benefits sometimes depend on the family income, the husband's or mother's own insurance, the number of children, the above mentioned factors and many others.

Generally the responses are not comperable because some countries answered very much in detail, others did not. Therefore, the results of this chapter are more to be seen in the sense of "what is possible in a country" than in the sense of "what is actually going on in a country".

12.1. Duration of Pregnancy Leave

Pertaining to the duration of pregnancy leave there are considerable differences within some member states:

1. The duration depends in many states on the mother's eligibility.
2. Some states offer a certain choice between short and extended leave. If the mother chooses the extended leave she receives less money for the additional time.

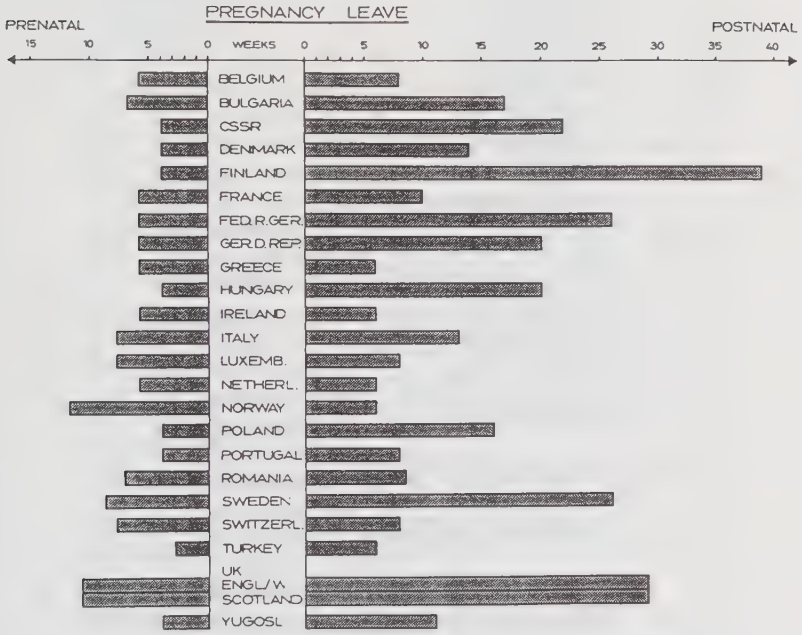
The above mentioned differences make it difficult to compare pregnancy leave in European countries, because it is not known if the supplied data is representative of actual practice in each country.

Many countries give additional time off in case of complications such as multiple pregnancies, premature births or late term births.

Some countries reported that the duration varies according to the number of children; in these cases the differences can be seen in Figure 2 and Figure 3. However, it is very likely that not all member states found this important enough to report. Therefore, Figure 2 and Figure 3 are rather incomplete.

The data shown on the following Figures should be read keeping the above mentioned reservations in mind.

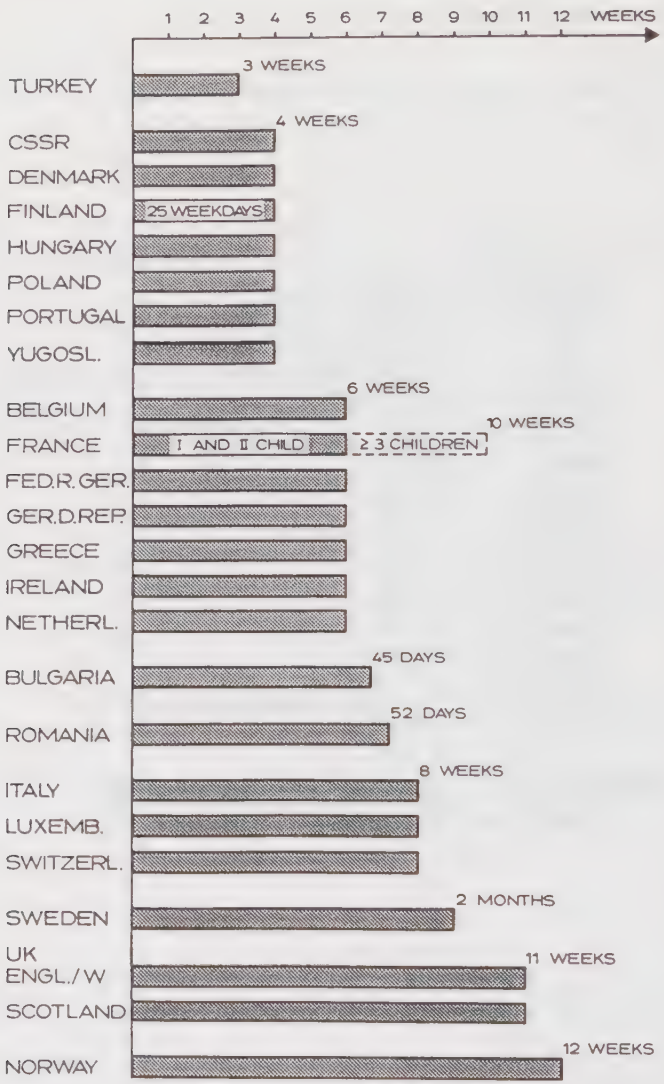
Figure 1
Duration of pregnancy leave in alphabetic order



Shifting between pre- and postnatal period is possible in BELGIUM, GDR, NORWAY and SWEDEN

Figure 2
See text

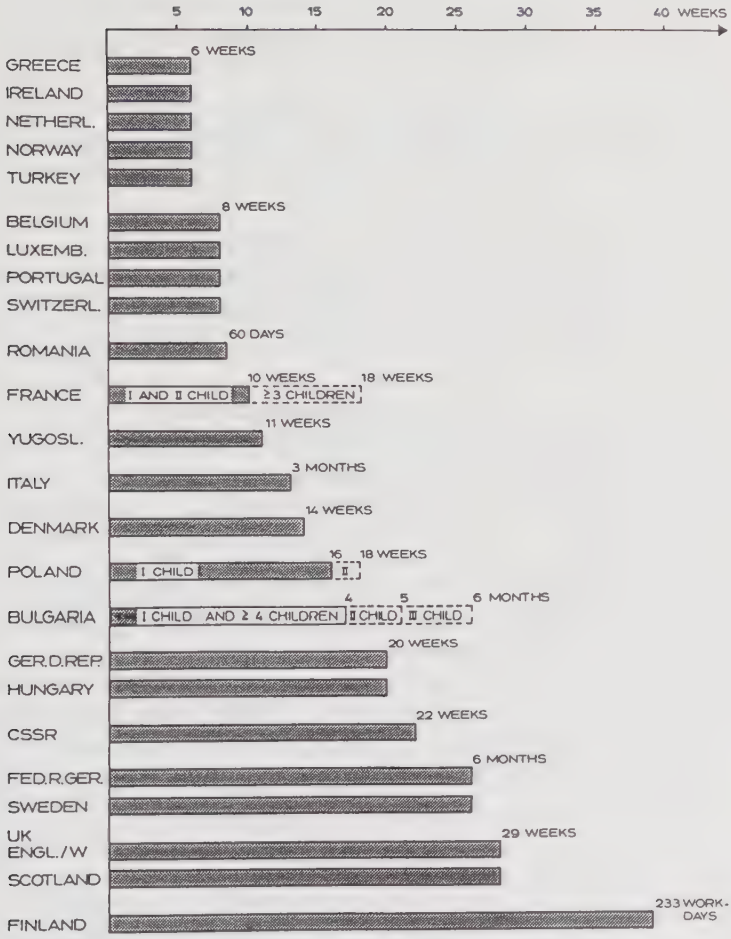
PRENATAL PREGNANCY LEAVE



Shifting between pre- and postnatal period is possible in BELGIUM, GDR, NORWAY and SWEDEN

see text

POSTNATAL PREGNANCY LEAVE



shifting between pre- and postnatal period is possible in BELGIUM, GDR, NORWAY and SWEDEN

12.2. Special Rights

Sick leave is regulated in all countries which have reported. As a rule a medical certificate is necessary. Sick leave is not fully paid in all countries.

In most countries night work is not completely forbidden but allowed in certain exceptions for special professions and branches, such as medical personnel etc.

Paid time-off for medical attention is given in most countries, if a visit during free time is impossible. No paid time off is given in BELGIUM, GREECE, HUNGARY and sometimes not in FRANCE, DENMARK and ITALY.

Some countries mentioned that the pregnant woman is protected from unfair dismissal because of pregnancy. Furthermore, the right of reinstatement after maternity leave was mentioned.

Single mothers receive additional leave in BULGARIA, CSSR and NORWAY. As a rule they have priority for the admittance to care-centres, Kindergartens etc. If necessary, some countries provide financial aid.

13. Summary

The care of a pregnant woman varies from member state to member state and very often even within one member state. It is remarkable that most countries have not much national data.

In some countries a pregnant woman has a "choice" among many facilities, in other member states quite a high percentage of women receive no care at all.

There are surprising differences in the number of recommended prenatal visits and, at the same time, in the attitude of women towards following these recommendations.

Medical examinations are mainly given by MDs and there is a tendency towards specialists' care.

Most countries have special strategies if a risk is spotted in a woman. It was complained that especially women with risk factors do often not comply with these strategies.

Many countries discovered that medical care is not enough for the expectant woman. Also psycho/social care is needed. The importance of the midwife as an advisor, trainer and home visitor must be emphasized, especially for those countries where the role of the midwife had been declining in recent years.

Differences in the duration of pregnancy leave could be interpreted as an indicator of mental attitudes with regard to pregnancy and motherhood.

Literature

1) Adam et. al.: La mortalité Perinatale: étude portant sur 6441 naissances de la region Wallone en 1977, Revue Med., Liege 1979, 34-133

2) Bakketeig L. S., Bergsjø P.: Transportfødsel i Norge, J. Norw. med. Ass., 1977, 97: 923-970

3) Blondel B., Kaminski M., Breart G.: Antenatal care and maternal demographic and social characteristics. Evolution in France between 1972 and 1976, J. Epidemil. Community Health, 1980; 34: 157-163

4) Brandt A., Horisberger B., Wartburg W. P. von (Editors): Cost-Sharing in Health Care, Proceedings of the International Seminar on Sharing of Health Care Costs, Wolfsberg/Switzerland, Berlin, Heidelberg, New York 1980

5) British Births 1970, Volume 2, London 1978, Heinemann Medical Books

6) Chalmers I., McIlwaine G. (Editors): Perinatal Audit and Surveillance, London 1980

7) CIGO: Centre d' Informatique en Gynécologie-Obstetrique (Belgium), unpublished statistics

8) Collatz J., Hecker H., Oeter K., Rhode J.J., Wilken M., Wolf E.: Perinatale Mortalität - Medizinsoziologische Untersuchungen zur Erklärung der Säuglingssterblichkeit in Niedersachsen und Bremen mit dem Ziel der Entwicklung von Maßnahmen zur Senkung der Mortalitätsraten, 1981 in print.

9) Collatz J., Klie K., Rhode J.J., Skoeries J., Sußbauer W., Wilken M.: Durchführung und Auswertung eines Modellversuchs zur Verbesserung der Schwangerenvorsorge und der Nachsorge von Säuglingen durch die Aktion Familien-Hebamme, München BPT-Bericht 3/81

10) Fraser C.M.: Routine Perinatal Procedures - Their Necessity and Psycho-Social Effects, Paper presented to the WHO, 1982 in print

11) Health Service Yearbook 1979, Instytut Matki I Dziecka, Warszawa 1980

12) Illich, Ivan: Die Nemesis der Medizin, Reinbek 1981 London 1976: Limits to Medicine (English Title)

13) Infratest Gesundheitsforschung: Geburtenverlauf und frühkindliche Entwicklung -Strukturerhebung-, München 1981, not yet published

14) Kafatos A.G., Batha K., Pantelakis S., Doxiadis S.: Infant mortality and morbidity in three counties of Greece, Iatriki, 1978, 33:39

15) Kafatos A.G., Pantelakis S., Doxiadis S.: Prenatal care in two counties of Greece with different infant mortality rates, Iatriki, 1978, 33:514

16) Phaff, J.M.L., Sassi L., Valvanne L., Hickl E.J.: Midwives in Europe, European Public Health Committee, Strasbourg 1975

17) Public Expenditure on Health, OECD Studies in Resource Allocation No. 4, Paris 1977

18) Rumeau-Rouquette C., Breat G., Mazaaubrun C. du, Crost M., Raarison Y.: Evolution de la pathologie périnatale et de la prevention en France, Enquêtes nationales INSEREM 1972-1976, J. Gyn. Obst. Biol. Repr., 1978,7,905-916

19) Selbmann H.K., Brach M., Elsner H., Holzmann K., Johannigmann J., Riegel K.: Münchener Perinatal - Studie 1975-1977, Köln 1980

20) Statistical Yearbook of Public Health and Health Services in the SFR of Yugoslavia 1978, Federal Institute of the Public Health, Beograd 1980

Lebenslauf

Geboren:	22. Januar 1948
bis 1/63	Volksschule, Gymnasium
2/63 - 1/66	kaufm. Lehre
2/66 - 1/68	kaufm. Angestellter
4/65 - 9/68	Berufsaufbauschule Rheydt (Teilzeitschule)
9/68 - 1/72	Studium an der Fachhochschule Niederrhein, Fachbereich Wirtschaft Abschluß: Betriebswirt (grad.)
2/72 - 9/72	Assistent der Geschäftsführung (Industrie)
10/72 - 7/74	Studium an der Freien Universität Berlin, Fachbereich Wirtschaft Abschluß: Diplom-Kaufmann
12/74 - 1/81	Assistent an der Fachhochschule Aachen, Fachbereich Wirtschaft
ab SS 1977	Studium der Medizin an der Universit Düsseldorf

Detlev Ohse